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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,789	02/07/2001	Behrooz Rezvani	VELCP008X1C	7769

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EXAMINER	
AHN, SAM K	

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/779,789	REZVANI ET AL.	
	Examiner	Art Unit	
	Sam K. Ahn	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment, 01/27/05*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,5,8-14 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5 and 9-14* is/are rejected.

7)☒ Claim(s) *4,8 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01/27/05* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1,2,5,9,10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara et al. USP 5,809,019 (Ichihara) in view of Taura et al. USP 6,438,183 B1 (Taura).

Regarding claims 1 and 12, Ichihara teaches a method and an apparatus for channel estimation in a communication (see Fig.2) having a transmit path (path coupled to 11 and 25) and a receive path (path coupled to 16 and 19) both coupled to a communication medium (13,14,15,18 and 26), and the apparatus comprising: a pseudo random noise generator (3) coupled to the transmit path to inject a codeword (pilot signal) into the transmit path; a correlator (28, note col.7, lines 15-16) coupled to the receive path wherein the correlator includes a detector (see Fig.3) to detect peaks (A and Ba) including both a peak corresponding with a leakage signal (A) together with at least one other peak corresponding to a reflection (Ba) of the injected codeword by the communication medium, and the detector determining at least one of the offset (T) between

peaks or a relative magnitude of the peaks, thereby estimating the channel characteristics across the communication medium (note col.7, lines 15-39). However, Ichihara does not explicitly teach the correlator generating an ordered set of correlation coefficients corresponding with successive phasings of the codeword with respect to a received signal.

Taura teaches a receiver (see Fig.9) comprising a correlator (55, 56) to generate an ordered set of correlation coefficients (stored in memory 53,54) corresponding with successive phasings of the codeword with respect to a received signal (received from 51,52). Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement the correlator of Ichihara having the correlator coupled to the memory, as taught by Taura explained above, for the purpose of effectively correlating the input signal with the stored correlation coefficients, thus effectively correlating the codeword received with the correlation coefficients stored in the memory.

Regarding claims 2,5,13 and 14, Ichihara in view of Taura teach all subject matter claimed, as applied to claim 1. Taura further teaches the correlator comprising a receive buffer (53,54) for storing an interval of the received signal or codeword; a shifter (52) for shifting the codeword with respect to the interval of the received signal in the receive buffer; and components for generating successive ones of the ordered set of correlation coefficients on each shift of the shifter (54,56,53,55,58,59).

Regarding claims 9 and 10, Ichihara in view of Taura teach all subject matter claimed, as applied to claim 1. Ichihara further teaches wherein the communication medium comprises one of a wired and a wireless communication medium (see Fig.2) and one of a physical modem and a logical modem (inherently having a physical modem in a system for modulating and demodulating).

2. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara et al. USP 5,809,019 (Ichihara) in view of Taura et al. USP 6,438,183 B1 (Taura) and Lechleider USP 5,410,264.

Regarding claim 11, Ichihara in view of Taura teach all subject matter claimed, as applied to claim 1. However, Ichihara in view of Taura do not teach wherein the communication device implements at least one X-DSL communication protocol.

Lechleider teaches implementation of a peak detector (351 in Fig.5, note col.6, lines 62-65) in a DSL environment (note abstract), which communicates using at least one X-DSL protocol. Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement the peak detection method taught by Ichihara in view of Taura in the system of Lechleider for the purpose of effectively detecting peaks in the signal received and thus determine a signal strength.

Allowable Subject Matter

3. Claims 4,8 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn
6/10/05